

nervis omnino immersis, lineis striatis transversis interruptis creberrime parallelis utrinque in sculptis, costa media rubella, margine revoluta, petiolo canaliculato; paniculis brevibus, petiolo 2-3-plo longioribus, pedunculo pedicellisque pubescentibus, corolla et calyce glabris, hoc dentibus ciliatis, petalis lanceolatis, carina interna dense lanatis.—Rio Guainia et Rio Casiquiare in Brasilia Septentrionali (Spruce, 3536).

The leaves are  $3\frac{3}{4}$  inches long,  $1\frac{1}{2}$  inch broad, on a petiole 3 lines in length; the racemes are 6-9 lines long, the flowers in bud  $1\frac{1}{2}$  line long; the petals are clothed internally with dense silky long hairs, springing from the prominent keel; the stamens are somewhat shorter than the petals; the filaments are compressed and glabrous; the two cells of the anthers are separated, and fixed upon the margins of an obovate connective; the ovary is densely clothed with adpressed white sericeous hairs, surmounted by a glabrous style of equal length\*.

### XXXVIII.—Notes on the *Hydroid Zoophytes*.

By Prof. ALLMAN †.

#### I. *Laomedea tenuis*, n. sp.

A SMALL species of *Laomedea* was found in August last, attached to the fronds of *Laminaria digitata*, dredged from about three fathoms water, off the town of Stromness. It was associated with *L. geniculata*, and, though tolerably abundant, might, from its great delicacy, have been easily overlooked.

I believe it to be an undescribed species, which may be distinguished by the following diagnosis:—

Stem geniculate; polypiferous ramuli having the same diameter as the stem, springing alternately from the geniculations; the entire stem and ramuli distinctly annulated; polype-cells with deeply-cleft margins; polypes very extensile, with 16 or 18 tentacula. Capsules medusiferous, large, cylindrical, with the proximal end conical, and with the remote end broad and truncated.

The present species is nearly allied to *L. lacerata*, which it resembles in its deeply-cleft polype-cells and in the form of its polypes, but must be distinguished from it by its polypiferous ramuli equalling the main stem in thickness, by the form of its capsules, and by their contents, which are here Medusæ, while in *L. lacerata* they are sporosacs.

\* A drawing of this species, with analytical details, will be given in 'Contributions to Botany,' plate 22 B.

† The species described in the present notes formed the subject of a paper read by the author at the late Meeting of the British Association at Aberdeen.

In the specimens examined, each capsule contained but a single Medusa, which sprang from the side of a blastostyle, and occupied the greater part of the capsule.

There can, I think, be no doubt that some minute Medusæ which I found free in the phial containing my specimens of *L. tenuis*, and which, so far as comparison was practicable, closely corresponded with those which lay contracted in the interior of the capsules, had been liberated from the present zoophyte. They were provided with a deep umbrella, having its transverse and vertical diameter each equal to about  $\frac{6}{100}$  of an inch. The form of the umbrella is rendered peculiar by the abrupt narrowing of its summit. The roof of the bell descends as a conical projection into the axis, and from the truncated apex of this inverted cone there hangs a conical manubrium, whose mouth is furnished with four tentacles, each terminating in a spherical cluster of thread-cells.

Four gastrovascular canals take their origin in the base of the manubrium, and, after ascending along the sides of the conical projection from the roof, descend in the walls of the umbrella to open into the circular canal. At the point where each radiating canal enters the circular canal there is a bulbous dilatation, from which two marginal tentacles are given off; and in the middle point between each of these bulbs there is a similar, though smaller, bulbous dilatation of the circular canal, which gives origin to a single tentacle. The tentacles have their endoderm presenting the usual vacuolated condition; and the thread-cells of their ectoderm are uniformly distributed over their surface, showing no tendency to an arrangement into distinct groups. The velum is moderately wide. There are no lithocysts or ocelli.

In the further development of the Medusa, the marginal tentacles are probably multiplied in each group; at least, in one specimen I found three tentacles springing from a single bulb. The Medusa also appears to belong to a type in which the generative elements are developed in the walls of the manubrium, thus affording an exception to the usual condition of the Medusæ in the *Campanulariadae*, where the generative elements are formed in special bodies which bud from the radiating canals\*.

\* In *Sarsia* and its allies the generative elements are formed, as is well known, in the walls of the manubrium, where they lie between the endoderm and ectoderm, a position quite similar to that assumed by them in the sporosac of *Clava*, *Hydractinia*, certain species of *Coryne*, of *Laomedea*, *Sertularia*, &c., as well as in the Medusa-buds of *Eudendrium ramosum*, Van Beneden, and certain other species of *Coryne*.

In *Laomedea dichotoma*, *L. geniculata*, &c., the generative elements are never formed in the manubrium of the Medusa bud, but in peculiar bodies seated on the course of the radiating canals. Now these bodies, at least in

II. *Clava discreta*, nov. sp.

In August last I obtained, upon the under surface of a stone near low-water mark, upon the shore of one of the small rocky islands of Orkney, a species of *Clava* which may be defined by the following short diagnosis:—

*Char.*—Polypes not grouped into clusters, but distributed at intervals upon a branched creeping stolon.

*Clava discreta* differs from *C. multicornis* chiefly in the peculiar development of the stolon, which consists of a branched creeping tube, invested with a distinct polypary, and sending up, at intervals of from about  $\frac{1}{8}$  to  $\frac{1}{2}$  an inch, very short free simple stems whose height scarcely exceeds the diameter of the stolon, and from whose summit the polypes emerge. The polypes are thus widely separated from one another, instead of being collected into clusters as in *C. multicornis*. They are of a light brown colour, and are also smaller than those of *C. multicornis*, scarcely exceeding  $\frac{1}{4}$  inch in height. In other respects they closely resemble them. The tentacula are about twelve in number, and the sporosacs are grouped in two or three clusters just behind the proximal tentacula.

The only specimen of this species I obtained was attached to the dead stolon of some other zoophyte, probably a *Coryne*, which it accompanied in its ramifications over the under surface of the stone on which it grew.

III. *Dicoryne stricta*, nov. gen. and sp.

The subject of the present note was dredged at Orkney in August last, in water of about three fathoms depth. It invested an old *Buccinum undatum* which contained a Hermit Crab, and

the Medusa of *Laomedea dichotoma*, which I carefully examined with regard to this point, are constructed precisely on the plan of the sporosacs in *Clava*, *Hydractinia*, &c. These sporosacs must be viewed as special zooids representing one term in the "alternation of generations" of the individual. Just so must the reproductive bodies (sporosacs) which bud from the radiating canals of the Medusa of *Laomedea dichotoma* be regarded as special zooids, and as representing a term in the life-series of the zoophyte.

In *Eudendrium ramosum*, for example, we have therefore this series represented by two terms:—

[Ovum] polype, medusa ;

while in *Laomedea dichotoma* it is represented by three:—

[Ovum] polype, medusa, sporosac.

In the *Eudendrium*, the series stops with the production of a *sexual* zooid in the form of a Medusa ; in the *Laomedea* it goes on through the *non-sexual* Medusa-bud until it finds its termination in the sexual sporosac-bud of the latter.

which was partly covered with *Hydractinia echinata*. Its generic and specific characters are embraced in the following diagnosis:—

DICORYNE.

*Char.*—Cœnosarc branched, clothed with a polypary and adhering by a tubular network. Polypes claviform, of two kinds, one sterile, the other proliferous, both borne upon the common cœnosarc, and issuing from the extremities of the branches. Sterile polypes with a verticil of filiform tentacula situated behind the mouth; proliferous polypes destitute of tentacula (and mouth?), and having the gonophores clustered round their base.

*D. stricta.* Stem rising to the height of about  $\frac{1}{2}$  an inch, irregularly branched; branches ascending at a very acute angle from the stem. Polypary slightly dilated at the extremities of the branches, somewhat corrugated near the base, but without distinct annulations. Tentacula about 16, in a slightly alternating verticil.

The only specimen of *Dicoryne stricta* I obtained was male. The polypary possessed but little transparency, and, as well as the polypes, was of a light brown colour. From the basal tubular network, besides the branched colonies, there also sprang unbranched stems which ascended vertically to the length of about a line, and bore each a terminal polype. These are apparently young zooids not yet complicated by branching, though many of the polypes seemed to have attained maturity, and presented the same difference of form as in the branched colony,—being in some cases tentaculiferous and sterile polypes; in others, polypes destitute of tentacles, and loaded with gonophores.

The habitat of *D stricta* seems to be entirely similar to that of *Hydractinia echinata*\*.

XXXIX.—*Characters of some apparently undescribed Ceylon Insects.* By F. WALKER.

[Continued from vol. iii. p. 265.]

Order HYMENOPTERA.

Fam. Formicidæ.

FORMICA EXERCITA. *Fœm.* Nigra, densissime et scitissime punctata, antennis subfiliformibus, scapo flagelloque apice rufescentibus,

\* In Professor Huxley's beautiful and philosophic memoir on the Oceanic Hydrozoa, just published by the Ray Society, he has proposed a terminology, partly special for the particular groups which form the subject of his memoir, and partly intended to apply to the Hydrozoa in general. I would gladly have adopted several of Professor Huxley's terms in the present paper, if I could have done so without accompanying them with definitions which would have inconveniently increased the length of these notes.